

exercise tolerance compared with aerobic training alone. (Evidence level 1+)

The GDG puts forward a number of arguments to justify recommending LRT, despite the evidence level being 1+:

- ▶ Lower limb weakness is common in COPD and is a poor prognostic indicator.
- ▶ LRT has other benefits, such as reducing falls in older people in general.
- ▶ LRT in combination with aerobic training results in greater improvements in peripheral muscle strength than aerobic training alone.

The claim that LRT reduces falls in older people is not supported by a citation, and our understanding is that this link remains equivocal. The other mitigating claims are not unique to LRT (see below).

The evidence statement relating to IMT is very similar to the statement for LRT, but the resulting recommendation is entirely different:

IMT using threshold loading devices or normocapnoeic hyperpnoea does not appear to augment the beneficial effects of general exercise training in patients with COPD. (Evidence level 1+)

IMT is not recommended as a routine adjunct to pulmonary rehabilitation.

To our eyes, based upon the evidence statements, the differing recommendations are inconsistent, particularly as the mitigating factors used by the GDG to justify its recommendation of LRT also hold true for IMT:

- ▶ Inspiratory muscle weakness is also common in COPD and is an independent determinant of survival.<sup>2</sup>
- ▶ IMT in combination with exercise training yields larger improvements in inspiratory muscles strength and endurance than aerobic training alone.<sup>3</sup>

Perhaps most importantly, unlike LRT, standalone IMT is an evidence-based intervention in its own right, and is supported by systematic reviews and meta-analyses.<sup>3 4</sup> Established benefits include, “inspiratory muscle strength and endurance, functional exercise capacity, dyspnoea and quality of life”.<sup>3</sup>

Given the highly influential nature of these guidelines, and their likely adoption as the ‘de facto’ standard of care, disparities in the interpretation of the evidence base must be justified carefully; failure to do so creates an impression of bias.

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## British Thoracic Society guideline on pulmonary rehabilitation in adults: does objectivity have a sliding scale?

We congratulate the Guideline Development Group (GDG) on the publication of their new pulmonary rehabilitation guideline.<sup>1</sup> However, we are concerned by the contrasting recommendations for limb resistance training (LRT), which is recommended, and for inspiratory muscle training (IMT), which is not. Both interventions have identical levels of evidence (1+) and similar evidence statements.

The evidence statement in relation to LRT is as follows:

In patients with COPD, resistance training in combination with aerobic training does not lead to additional benefits to health-related quality of life, dyspnoea or

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**Competing interests** AKM acknowledges a beneficial interest in an inspiratory muscle training product in the form of a share of license income to the University of Birmingham and Brunel University. She also acts as a consultant to companies manufacturing inspiratory muscle training products, as well as being the author of two books on respiratory muscle training.

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## REFERENCES

- 1 Bolton CE, Bevan-Smith EF, Blakey JD, *et al*. British Thoracic Society guideline on pulmonary rehabilitation in adults: accredited by NICE. *Thorax* 2013;**68**(Suppl 2):ii1–30.
- 2 Gray-Donald K, Gibbons L, Shapiro SH, *et al*. Nutritional status and mortality in chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 1996;**153**:961–6.
- 3 Gosselink R, De Vos J, van den Heuvel SP, *et al*. Impact of inspiratory muscle training in patients with COPD: what is the evidence? *Eur Respir J* 2011;**37**:416–25.
- 4 O'Brien K, Geddes EL, Reid WD, *et al*. Inspiratory muscle training compared with other rehabilitation interventions in chronic obstructive pulmonary disease: a systematic review update. *J Cardiopulm Rehabil Prev* 2008;**28**:128–41.

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# British Thoracic Society guideline on pulmonary rehabilitation in adults: does objectivity have a sliding scale?

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